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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/683,941      | 03/05/2002  | Syun Kyung Lee       | 201-0148 FGM        | 5497             |

28866 7590 09/05/2003

MACMILLAN, SOBANSKI & TODD, LLC  
ONE MARITIME PLAZA - FOURTH FLOOR  
720 WATER STREET  
TOLEDO, OH 43604

|          |
|----------|
| EXAMINER |
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LUM, LEE S

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

3611

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/683,941

Applicant(s)

LEE ET AL.

Examiner

Ms. Lee S. Lum

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 15 July 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. An Amendment was filed 7/15/03 in which Claims 18-20 were also cancelled.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1-8 and 10-17** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 1-8, "a preemptive mode" is unclear because it is not described in this claim, nor in subsequent Claims. Only a condition under which it is actuated is recited here, not the actual mode itself.

In Claim 10, "said controller senses the wheels being on said surface by sensing an occurrence of a slip condition" is unclear/illogical because, as best understood, the controller senses an occurrence of a slip condition; the controller does not, then, as a result, "sense the wheels on the road surface".

In Claim 11, "preemptive...mode" is unclear because it is not described here or in subsequent claims, or lacks antecedent basis.

3. Formal drawings reflecting the approved corrections filed 7/15/03 should be submitted with the Response to this Action.

Art Unit: 3611

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

As best understood, **Claims 1-8** are rejected under 35 U.S.C. 102(b) as being anticipated by Showalter 5704444.

As best understood, Showalter discloses a four-wheel drive assembly comprising

Torque transfer assembly 10 having a first mode of operation which increases torque to a slower pair of wheels (Step 322; col 10, line 64, to col 11, line 3; both driveshafts 50:50, therefore increased torque applied to slower driveshaft) upon a sensed slip condition (i.e., certain difference between front and rear axle speeds – Step 318),

The mode terminating after a period of time (e.g., "every one to five seconds", col 10, lines 18-21) without an occurrence of a slip condition,

The mode recurring upon a sensed slip condition after the time period, and,

The mode terminating upon attainment of a certain vehicular speed\* (Step 334), and a certain difference\* between first and second axles (Step 306A).

\* Precise values of "time period", "vehicular speed" and "difference between axle speeds" are disclosed in col 12, first entire paragraph.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3611

As best understood, **Claims 9-17** are rejected under 35 U.S.C. 102(b) as being anticipated by Showalter in view of Hiwatashi 6094614.

As best understood, re **Claims 9-11**, Showalter does not disclose the calculation of a road surface coefficient, while Hiwatashi shows this computation in step 101, for example. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this calculation, as shown in Hiwatashi, to increase accuracy of the torque transfer assembly, thus increase safety (minimization of slip via appropriate torque transfer between the driveshafts) and comfort of the passengers.

Re **Claim 12**, Showalter discloses one predetermined condition for possible torque transfer as vehicle speed (col 11, lines 32-34) and wheel speed (Step 312).

Re **Claims 13-17**, Showalter discloses all other elements as discussed in the preceding (third) paragraph.

6. RESPONSE TO REMARKS

Examiner reiterates her rejections using Showalter, and Hiwatashi, as provided above. In particular, re Claims 1 and 9, Showalter discloses "said torque transfer assembly increases torque to a slower pair of wheels upon a sensed slip condition" in col 10, last paragraph, to col 11, first paragraph. This disclosure clearly describes the calculation of the difference between the driveshafts, and when the difference exceeds a threshold, which defines a "slip condition", torque is split between the driveshafts. This description undubitably shows the "slower wheels receiving increased torque", despite Applicant's remarks to the contrary. Further, the remark, "Showalter simply engages the front drive... shaft if detected slip exceeds a threshold amount", is unclear because each driveshaft has a torque during travel; the front driveshaft is not stationary.


• Art Unit: 3611

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, M-F, 9-6. Our fax numbers are (703) 872-9326 and 308-2571 for comms having given prior notice to the examiner. Any inquiry of a general nature, or relating to the status of this application/proceeding, should be directed to Customer Assistance at (703) 306-5771.

  
LESLEY D. MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600

Ms. Lee S. Lum  
Examiner  
9/2/03

